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ABSTRACT

This course outline gives a historical introduction and review of data processing, and prepares students with the skills and techniques necessary to operate keypunch and verifier equipment. Course goals, specific block objectives (orientation, introduction to punched-card machines, keypunch operations, and card verifier operations), and a Quinmester posttest sample comprise the course. It has a five-item bibliography. (NH)

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AUTHORIZED COURSE OF INSTRUCTION FOR THE QUINMESTER PROGRAM

DADE COUNTY PUBLIC SCHOOLS

CE001869

Course Outline
DATA PROCESSING TECHNOLOGY - 8025
(Keypunch and Verifier - Basic)
Department 73 - Quin 8025.11
8120.01 (old)

DIVISION OF INSTRUCTION • 1973

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D A D E C O U N T Y P U B L I C S C H O O L S

1 4 5 0 N O R T H E A S T S E C O N D A V E N U E

M I A M I, F L O R I D A 33132

Course Outline

DATA PROCESSING TECHNOLOGY - 8025
(Keypunch and Verifier - Basic)

Department 73 - Quin 8025.11
8120.01 (old)

county office of

VOCATIONAL AND ADULT EDUCATION

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Dr. E. L. Whigham, Superintendent of Schools
Dade County Public Schools
Miami, Florida 33132

March, 1973

Published by the School Board of Dade County

Course Description

8025	73	8025.11	Keypunch and Verifier - Basic
State Category Number	County Dept. Number	County Course Number	Course Title

A historical introduction or review of data processing is given. The students are then introduced to the Hollerith Code, data processing vocabulary, operating of the IBM 024, 026 and 029 keypunches, and the 056-059 card verifier.

Indicators of Success: None, however, a typing course would be helpful to the student sometime during data processing courses.

Clock Hours: 45

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PREFACE

The following introductory quinmester course is designed for the 10th, 11th, or 12th grade student. Subjects covered in this quinmester are the keypunch and verifier.

The first two weeks of the course provide an introductory (hands off) look at data processing. During this period, emphasis is placed on the historical background, terminology, and general information of the subject. The following seven weeks the student will learn the various skills and techniques necessary to operate the keypunch and verifier equipment.

The purpose of this course is to teach the basic principles necessary to understand the functions of the keypunch and verifier. The time spent in acquiring the manipulative skills depends upon the individual's previous knowledge, experience, and typing speed. If the student is to gain full benefit of the course, he must realize the importance of the skills and techniques of machine operations and the relationship of punch card information to business.

In presenting the material outlined in this course, the instructor uses explanation, demonstration and student projects as methods of instruction. After instruction and practice on the various machines, evaluation of the student's understanding and skills of these machines is made. Production tests must be passed on each phase of work covered.

This outline consists of five blocks of instruction, which are subdivided into several units each. This course is 45 hours in length.

This outline was developed through the cooperative efforts of the instructional and supervisory personnel, the Quinmester Advisory Committee, and the Vocational Curriculum Materials Service, and has been approved by the Dade County Vocational Curriculum Committee.

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with Suggested Hourly Breakdown

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BLOCK

I. ORIENTATION (1 Hour)
- Familiarizing the Student with School Regulations and Course Objectives . . . 1
- Regulation in the Use of Equipment and Materials . . 1

II. INTRODUCTION TO PUNCHED-CARD MACHINES (9 Hours)
- Historical Background of the Punched Card and Punched-Card Devices . . . 1
- Applications of Punched-Card Machines . . . 1
- Operating Procedures for Punched-Card Machines . . . 1
- Punched Card . . . 1

III. KEYPUNCH (20 Hours)
- Operating Features - Description, Location and Operation . . . 2
- Machine Functions . . . 2
- Operating Procedures . . . 2
- Operating Suggestions and Precautions . . . 3
- Special Features on Printing Card Punch . . . 3

IV. CARD VERIFIER (10 Hours)
- Operating Features . . . 3
- Operating Procedures . . . 4
- Operating Suggestions . . . 4

V. QUINMESTER POST-TEST (5 Hours)

APPENDIX: QUINMESTER POST-TEST SAMPLE . . . 7

GOALS

The student must be able to demonstrate:

1. Knowledge of the various types, uses and the fundamental operating principles of punched card equipment used in the data processing field.

2. Ability to interpret punched card records.

3. Ability to expand vocabulary so as to include the nomenclature of punched card equipment.

4. Understanding of the importance of accuracy and speed of the card punch operator.

SPECIFIC BLOCK OBJECTIVES

BLOCK I - ORIENTATION

The student must be able to:

1. State what will be expected of him as a student keypunch-verifier operator.
2. Demonstrate an understanding of the proper use of equipment and materials

BLOCK II - INTRODUCTION TO PUNCHED-CARD MACHINES

The student must be able to:

1. Explain punched-card history and card/equipment differences.
2. Explain punched-card applications.
3. State basic operating procedures for punched card machines.
4. Describe the punched-card and Hollerith code.

BLOCK III - KEYPUNCH

The student must be able to:

1. Describe operating features of keypunch.
2. Describe machine functions.
3. Explain operating procedures.
4. State operating suggestions.
5. Describe special features.

BLOCK IV - CARD VERIFIER

The student must be able to:

1. Describe operating features of the card verifier.
2. Explain operating procedures.
3. Explain operating suggestions.

BLOCK V - QUINMESTER POST-TEST

The student must be able to:

1. Satisfactorily complete the quinmester post-test.

Course Outline

DATA PROCESSING TECHNOLOGY - 8025
(Keypunch and Verifier - Basic)

Department 73 - Quin 8025.11
8120.01 (old)

I. ORIENTATION

A. Familiarizing the Student with School Regulations and Course Objectives
   1. School policy rules and facilities of school
   2. Objectives and requirements of course
   3. Methods and techniques of presenting instruction

B. Regulation in the Use of Equipment and Materials
   1. Safety practices in the use of equipment
   2. Care of equipment and materials
   3. Classroom procedures and cleanliness of work area

II. INTRODUCTION TO PUNCHED-CARD MACHINES

A. Historical Background of the Punched Card and Punched-Card Devices
   1. Evolution of punched card and punched-card devices
      a. Dr. Herman Hollerith
      b. 1890 Census
   2. Difference between types of
      a. Punched cards
      b. Punched-card devices

B. Applications of Punched-Card Machines
   1. Business
   2. Industrial and scientific research
   3. Military installations

C. Operating Procedures for Punched-Card Machines
   1. Setting up the operation
      a. Inserting control panels
      b. Setting the switches
   2. Inserting the cards in the machine hopper
   3. Operating the machine
   4. Observing the signal lights
      a. Location
      b. Purpose
   5. Removing cards from the stacker
   6. Testing the machine operation

D. Punched Card
   1. Description
      a. Size
      b. Characteristics
   2. Use

a. Information punched into cards for record keeping
b. Cards basic operation unit in punched-card accounting
c. Cards processed for printed reports
d. Cards reused many times become permanent records

3. Punching system
   a. Numerical
   b. Alphabetic
   c. Special characters
   d. Special control punches

III. KEYPUNCH

A. Operating Features - Description, Location and Operation

1. Card hopper
2. Punching station
3. Reading station
4. Card stacker
5. Main-line switch
6. Reading board
7. Backspace key
8. Column indicator
9. Pressure-roll release lever
10. Chip box and fuses
11. Keyboard
    a. Punching keys
    b. Functional keys
    c. Space bar
    d. Functional control switches
12. Program unit
    a. Program card
    b. Program drum
    c. Program-control lever
    d. Alternate program unit
13. Advantages
14. Limitations
15. Theory of operating card punch

B. Machine Functions

1. Description
   a. Numerical punching
   b. Alphabetic punching
   c. Duplicating punched cards
      (1) Automatic control
      (2) Key depression
2. Purposes
3. Advantages
4. Limitations
5. Application

C. Operating Procedures

1. Turning on main-line switch
2. Inserting cards manually
3. Numerical punching with program control

III. KEY PUNCH (Contd.)

4. Alphabetic and numerical punching with program control
5. Correcting errors
6. Inserting prepunched master cards
7. Making over damaged cards
8. Turning off main-line switch when finished

D. Operating Suggestions and Precautions
1. Starting a punching operation
2. Engaging the program reading mechanism
3. Stopping a punching operation
4. Clearing the card bed
5. Removing cards
   a. From center of card bed or left of card bed
   b. From punching or reading station
6. Spacing over columns
7. Multiple-punched columns
8. X-punching and skipping
9. Corner cuts
10. Single-card feeding
11. Locking the keyboard
12. Suspending automatic duplication in first card
13. Checking registration
14. Eliminating card jams
15. Using alternate program unit

E. Special Features on Printing Card Punch
1. Description, location and operation
   a. Printing mechanism
      (1) Controls printing
      (2) Interprets characters punched above columns
      (3) Ribbon replacement
   b. Print switch
2. Codes applying to printing
   a. Left zero print - 2
   b. Print suppression - 3

IV. CARD VERIFIER

A. Operating Features
1. Description, locations and operation
   a. Main-line switch
   b. Card hopper
   c. Verifying station
   d. Reading station
   e. Card stacker
   f. Program control level
   g. Program unit
   h. Column indicator
   i. Pressure-roll release lever
   j. Combination keyboard

k. Functional control switches
l. Reading board
m. Error light
n. Chip box and fuses

2. Advantages
3. Limitations
4. Theory of operating card verifier

B. Operating Procedures
1. General operation same as card punch
2. Error detection routine
a. Error light
b. Keyboard locking
c. ERROR-RELEASE key
d. FEED key
e. SKIP key

C. Operating Suggestions
1. OK notch
2. X-verifying and skipping
3. Multiple-punch verification

V. QUINMESTER POST-TEST

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2. IBM Reference Manual - IBM 24 Card Punch, IBM 26 Printing Card Punch. Form GA24-0520-3. White Plains, New York: International Business Machines Corporation, 1965. Pp. 39.

3. IBM Reference Manual - IBM 29 Card Punch. Form A24-3332-5. White Plains, New York: International Business Machines Corporation, 1968. Pp. 45.

4. IBM Student Text - An Introduction to IBM Punched Card Data Processing. Form F20-0074-0. White Plains, New York: International Business Machines Corporation, n.d. Pp. 20.

Supplementary References:

5. IBM Operators' Guide Reference Manual. Form A24-1010-0. White Plains, New York: International Business Machines Corporation, 1959. Pp. 143.

A P P E N D I X

Quinmester Post-Test Sample

Quinmester Post-Test

In order to complete the Keypunch and Verifier course satisfactorily, the student must be able to identify the controls and features of both machines, explain their function and operate them under simulated job conditions. Card handling, making a program drum card, punching numeric and/or alphabetic data with minimum errors, and verifying what had been keypunched with minimum supervision would be factors considered in evaluation of the student.